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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,307	07/29/2003	Jobst La Dous	100341.52572US	4469

23911 7590 01/29/2007  
CROWELL & MORING LLP  
INTELLECTUAL PROPERTY GROUP  
P.O. BOX 14300  
WASHINGTON, DC 20044-4300

EXAMINER
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FIGUEROA, JOHN J

ART UNIT	PAPER NUMBER
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1712

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/29/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/628,307	DOUS, JOBST LA	
	<b>Examiner</b>	<b>Art Unit</b>	
	John J. Figueroa	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 depends from claim 6, which in turn, depends from claim 4. Claim 11, as amended, is extremely confusing and not further limiting of its parent claims. The claim is drawn to a method of producing a resin body comprising, inter alia, initially producing a first polymer network by a polyaddition reaction, subsequently producing a second polymer network by thermal, radical or UV polymerization, and forming the body *simultaneously* with the steps of producing said first and second polymer networks. It is unclear and confusing as to how one skilled in the art can form the second polymer network subsequent to forming the first polymer network while, at the same time, *simultaneously* form the resin body AND also said first and second polymer networks by a polyaddition reaction and by either a thermal, radical or UV-light polymerization, respectively.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1 and 4-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 5,886,101 to Sommerfeld et al., hereinafter 'Sommerfeld', in view of Applicant's admitted prior art in paragraph [0025] of the specification. See MPEP §2129 [R-2].

Sommerfeld disclose articles that are formed from two polymer networks of different polymer materials. (Col. 2, line 60 through col. 3, line 10 and col. 13, lines 45-47) Sommerfeld discloses preferred interpenetrating networks that include polyurethane/acrylic networks. Sommerfeld does not expressly teach that the articles are transparent. However, because the network taught by Sommerfeld contains the same polymers set forth in the instant claims, the articles produced from this network would inherently be transparent.

Sommerfeld discloses that photochromic systems are employed and that dyes are added to the interpenetrating networks. (Col. 15, lines 23-14 and col. 19, line 63) Sommerfeld further discloses the sequential formation of the interpenetrating polyurethane/acrylic network, where the first polyurethane network is formed without an initiator and where the second acrylic network is formed in the presence of heat. (See, e.g., Example 7, columns 32-33) Sommerfeld discloses that inorganic filler can be added (col. 22, lines 49-52) and that the plastic materials produced can be used in automobile production, which would include window glazings (col. 13, lines 36-47).

Sommerfeld further discloses that the polymerization residues of the composition of matter containing the interpenetrable polymeric network (body formed from polymerization) can contain a pigment or a colorant dispersed therein and be used as films for semi-permeable membranes, for structural automobile parts and panels, as mold release films, adhesive films, as a photoresist for printed circuit boards, solder masks, and as plastic materials in aircraft. (Col. 13, lines 17-48 and 55-66; col. 14, lines 27-67; col. 23, line 65 to col. 24, line 18; col. 24, line 32 to col. 25, line 29; col. 25, lines 50-65) In addition, Sommerfeld teaches that these interpenetrable polymeric networks have superior toughness-flexibility and solvent-resistance and that these polymeric composition products are particularly useful in photosensitive compositions, such as photoresists and solder masks. (Col. 13, lines 49-54)

Although Sommerfeld teaches that photochromic dyes are added, Sommerfeld fails to teach that the dyeing process is accomplished through a mass dyeing process wherein the dye is added prior or during the polymerization reaction.

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time that the claimed invention was made, to use the formed product (body) during Sommerfeld's polymerization process in an application, such as a photoresist or as a solder mask. It would have been obvious to one in the art to do so to provide a photoresist or solder mask having enhanced marketable properties, such as toughness-flexibility and solvent-resistance, in accordance with Sommerfeld's own teachings.

Moreover, on page 7, in paragraph [0025] of the specification, Applicant states that the economical and technical advantages of mass dyeing as compared to

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subsequent surface dyeing by diffusion are well known to a person skilled in the art.

Therefore, it would have also been obvious to one in the art at the time of the invention to employ a mass dyeing technique to the compositions of Sommerfeld when a photochromic dye is desired. The motivation would have been that as stated by applicant, there are economical and technical advantages of this process that one of ordinary skill in the art would have wanted to obtain in utilizing the compositions of Sommerfeld. As a result of this process, the photochromic dye would be homogenously distributed in the interpenetrating polymer network.

Thus, the claims are unpatentable over Sommerfeld.

### ***Response to Arguments***

Applicant's arguments filed December 18, 2006 have been fully considered but they are not persuasive. Applicant's principal argument is that Sommerfeld does not expressly disclose the dye to be homogeneously distributed within the interpenetrating polymer networks. Aside from Applicant's own declaration, there is no evidence to show that, as discussed above, upon the obvious use of a mass dyeing technique to form the compositions of Sommerfeld when incorporating a desired photochromic dye, the photochromic dye would not be homogenously distributed in the interpenetrating polymer network. It is unclear from Applicant's arguments (and no evidence to support a showing to the contrary) as to why the interpenetrable polymer networks disclosed in Sommerfeld would not have the dye homogeneously distributed therein, when formed by an obvious mass dyeing technique as recited in the instant claims.

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Therefore, the claims, as amended, remain unpatentable over Sommerfeld.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Figueroa whose telephone number is (571) 272-8916. The examiner can normally be reached on Mon-Thurs & alt. Fri 8:00-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JJF/RAG



RANDY GULAKOWSKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700